techniques take assistance from additional data such as the sender's identity being a member of the family or a work associate etc.

A drawback of known techniques is their poor ability to predict the importance of received e-mails to the recipient and what is the right order to
5   process the massive amount of messages in the user's inbox. Moreover, for employees in medium and large organizations, the vast majority of incoming messages originate from within the organization, and the importance of those is very difficult to determine based solely on their content. For example, a device failure in a telecommunications service provider's installation discovered by a field
10 engineer, is reported by e-mail to a long distribution list comprising of development personnel, customer support personnel, regional sales people and management. The original e-mail message triggers a long chain of messages that may include questions, answers, comments and personal opinions relating to the original message. These messages reach a broad distribution list using the famous "reply
15 all" feature. Many recipients gradually lose interest in the discussion, but they keep being copied nevertheless. The e-mails in the chain are very hard to distinguish by analyzing their content, since they all include the original problem description, and they all include relevant technical terms. On the other hand, their subjective importance and relevance for different recipients may vary significantly.

20 US 2002/0071546A1 (Brennan) published June 13, 2002 and entitled *"Method, device and software for processing incoming communications"* discloses methods, devices and software for processing incoming communications such as e-mails whereby incoming messages and calls may be prioritized in accordance with the rank of the message or call originator within the organization. This may be
25 effected by querying an organization chart for the organization upon receipt of an incoming communication, in order to assess the rank of the originator. The organization chart may be stored in a directory server, and queried by a computing device receiving the message or processing the call.

In all embodiments, higher priority is given when the originator is of higher
30 rank than the recipient. In one variation, the determining metric is the total distance

01490986\10-04   2

AMENDED SHEET

within the organizational hierarchy between a supervisor who is common to the originator and recipient. This variation also accords higher priority to a message whose originator is superior in rank than the recipient.

WO0180535A1 published October 25, 2001 and entitled *"Communications*

5 *Prioritizer"* discloses a method of prioritizing a received information message in which the circumstantial origin of the message is indicated by a personalized identifier accompanying or derived from the message in regard to e-mail or other communications systems. The method includes the elements of receiving the message, determining the personalized identifier, looking-up and cross-referencing

10 the personalized identifier to a database of known personalized identifier and priority codes, assigning a priority code to the message per the result of the element of looking-up and cross-referencing, and prioritizing (including categorizing, sorting, redirecting, erasing, or otherwise acting upon) the received message according to the priority code.

15 This publication too is based on the rank of the sending party, and does not take into account the rank of the recipient.

SUMMARY OF THE INVENTION

It is an objective of the invention to provide a method and system that allow incoming messages to be pre-sorted or pre-tagged based on their relative

20 importance as defined by pre-defined criteria, so as to allow the recipient to attend first to those received messages that are likely to be most urgent.

The present invention addresses this objective by providing a method and system for assigning importance classes to electronic messages. The term "electronic messages" relates to e-mail messages, facsimile messages, or to text

25 data of converted voice messages or pager messages. In the context of the present invention, the term "importance class" relates to the degree of relevance to a certain

01490986\10-03   2a

AMENDED SHEET

recipient of a communication, assigned by a system using the method to each of a group, consisting at least one element, of electronic messages. The term "assigning importance classes" relates to associating each of a group, consisting at least one element, of electronic messages, with an importance class attribute, for example, by
5   means of embedding, tagging or any other acceptable linking method.

The method comprises identifying the sender of an electronic message, identifying the recipient of the electronic message, determining a relative organizational distance between the sender and the recipient, and assigning the electronic message an importance class as a function that assigns the importance
10   class regardless of whether the sender and the recipient is of higher rank.

In the context of the present invention, the term "relative organizational distance" relates to a metric derived from an organization hierarchical structure. Specifically, in a preferred embodiment the relative organizational distance is a function of the level of work affiliation between the corresponding departments of
15   the message sender and the message recipient, and of the relative hierarchical level of said sender and receiver. In a further embodiment, this function is refined according to one or more of the following: (a) a set of global control rules according to the organizational structure and the work affiliation among different departments and different hierarchical layers in the corporation; (b) a set of control
20   rules according to ad hoc work groups formed from time to time; (c) a global list of preferred originating addresses, external to the organization, from senders affiliated with the organization.

For example, a message from an individual in the same department as the recipient is often attributed a higher importance than a message arriving from a
25   different department, or a message from the same position level or from a direct supervisor or from a person directly reporting to the recipient, is attributed a higher importance class than a message from a sender positioned much higher or further down in the hierarchy. A message from an essential unit for daily operation (e.g. a

01490986\10-03   3

AMENDED SHEET

importance classes to electronic messages, said system comprising:

(a) a message data extraction unit for identifying a sender and a recipient of an electronic message. The message data extraction unit is a series of computer instructions adapted to capture an identification of a message sender and the message recipient; and

(b) a classifier coupled to the message data extraction unit and being responsive to a relative organizational distance between the sender and the recipient for assigning to the electronic message an importance class in inverse dependence on the relative organizational distance between the sender and the recipient. The classifier is a module of computer program capable of associating identities of message senders and message recipients with pre-determined organizational data, for determining the relative organizational distance between respective senders and recipients. The classifier is further capable of calculating an importance class attribute of a message, according to a relative organizational distance between the sender and the recipient.

In a further embodiment, the classifier is further adapted to assigning said importance class based on at least one additional criterion, selected from the following:

(a)   a pre-defined message sender criterion;

(b)   a pre-defined content criterion;

(c)   a plurality of rules formed by a machine-learning algorithm tracing user actions;

(d)   an analysis of e-mail message headers.

According to a preferred embodiment, the calculation of the importance class attribute by the classifier further involves a rules formation unit comprising:

(a)   a set of global control rules relating to an organizational structure and work affiliation among different departments and different hierarchical layers thereof;

(b)   a set of control rules relating to ad hoc work groups formed from time to time in said organizational structure; and

If <organizational distance=high> then < importance=low>

If <sender & recipient belong to workgroup> then <importance=high>

If <address is external and address belongs to preferred list> then <importance=high>

The organizational distance is calculated as follows:

$Org\_dis = dep\_dis + her\_dis$

Where: dep_dis is the departmental distance and her_dis is the hierarchal distance.

Dep_dis can assume 3 values – 0,1,2 (where 0 corresponds to the same department).

Her_dis can assume the values – 0,1,2,3,…. (where 0 corresponds to the same hierarchal layer, 1 corresponds to +/- 1 level difference etc.).

Organizational distance is defined as follows:

If $(org\_dis <= T1)$ then (organizational distance = low)

If $(org\_dis > T1$ and $<= T2)$ then (organizational distance = medium)

Else (organizational distance = high)

Default values: $T1=1$, $T2=2$

Each user may define a set of personal preferences relating to senders internal or external to the organization. Such user's personal settings can only increase the importance set by the administrator. For example, personal preferences may be of the following types:

(a)   If <sender belongs to preferred_internal_address> then <importance=high>

(b)   If <sender belongs to preferred_external_address> then <importance=high>

AMENDED SHEET

CLAIMS:

1.   A method of assigning importance classes to electronic messages, the method comprising:

   (a)·   identifying the sender of an electronic message;

   (b) - identifying the recipient of the electronic message;

   (c)   determining a relative organizational distance between the sender and the recipient; and

   (d)   assigning the electronic message an importance class as a function of the relative organizational distance between the sender and the recipient;

characterized in that:

   (e)   said function is independent of which of the sender or the recipient is of higher rank.

2.   The method according to claim 1, wherein said function is further weighted by at least one additional criterion, selected from the following:

   (a)   a globally defined content criterion;

   (b)   a personally defined message sender criterion;

   (c)   a personally defined content criterion;

   (d)   a plurality of rules formed by a machine-learning algorithm or algorithms.

   (e)   an analysis of e-mail message headers.

3.   The method according to claim 2, wherein the at least one additional criterion is a function of content in the message subject field and/or in the message body.

4.   The method according to claim 2 or 3, wherein assigning the electronic message an importance class includes analyzing actions taken by said recipient on receipt of said messages so as to establish a relative importance ascribed by the recipient to received messages.

5.   The method according to any one of claims 1 to 4, wherein said electronic message is an electronic mail (e-mail) message.

01490986\10-03   26

6.   The method according to any one of claims 1 to 4, wherein said electronic message is a facsimile message.

7.   The method according to any one of claims 1 to 4, wherein said electronic message is a converted voice message or pager message text data.

8.   The method according to any one of claims 1 to 7, wherein the relative organizational distance between the sender and the recipient is determined from an organizational structure of a corporation and said function is refined according to one or more of the following:

(a)   a set of global control rules according to the organizational structure and the work affiliation among different departments and different hierarchical layers in the corporation;

(b)   a set of control rules according to ad hoc work groups formed from time to time;

(c)   a global list of preferred originating addresses, external to the organization, from senders affiliated with the organization.

9.   A method for streamlining the management of electronic messages, the method comprising

(a)   assigning an importance class to each of said messages according to the method of any one of claims 1 to 8; and

(b)   streamlining said messages in a pre-determined manner in accordance with the respective importance class of each message.

10.   The method for streamlining the management of electronic messages according to claim 9, wherein streamlining the messages includes displaying notifications of incoming messages in a color that is characteristic of the respective importance class of each message.

11.   The method for streamlining the management of electronic messages according to claim 9, wherein streamlining the messages includes displaying in association with notifications of incoming messages a distinctive tag that is characteristic of the respective importance class of each message.

01490986\10-03   27

AMENDED SHEET

12. The method for streamlining the management of electronic messages according to claim 9, wherein streamlining the messages includes sorting notifications of incoming messages in a pre-determined order, indicating the relative importance of said messages in respect with their assigned importance classes.

13. The method for streamlining the management of electronic messages according to any one of claims 9 to 12, wherein streamlining the messages includes blocking messages whose importance class is beneath a predetermined threshold.

14. The method according to Claim 13, further including alerting the sender that a message has been blocked.

15. The method according to any one of the preceding claims being implemented on a copy of the message that is external to a central repository on which incoming messages are stored so as to enable uninterrupted service in the case that said method fails to operate or malfunctions.

16. The method according to any one of the preceding claims including selectively transmitting e-mail messages from an e-mail server's inbox to a client computer's inbox, according to said importance class.

17. The method according to any one of the preceding claims, further including grouping messages residing in a user's inbox into archives, according to their importance class and an elapsed time since they were received.

18. The method according to any one of claims 1 to 17, including using a graphical tool to define the organizational distance between different entities within the organization.

19. A system for assigning importance classes to electronic messages, said system comprising:

a message data extraction unit for identifying a sender and a recipient of an electronic message; and

a classifier coupled to the message data extraction unit and being responsive to a relative organizational distance between the sender and the recipient

01490986\10-03   28

AMENDED SHEET

for assigning an importance class to the electronic message regardless of whether the sender or the recipient is of higher rank.

20.   The system according to claim 19, wherein the classifier is further adapted to assigning said importance class based on at least one additional criterion, selected from the following:

(a)   a pre-defined message sender criterion;

(b)   a pre-defined content criterion;

(c)   a plurality of rules formed by a machine-learning algorithm tracing user actions;

(d)   an analysis of e-mail message headers.

21.   The system according to claim 19 or 20, further including a rules formation unit comprising:

(a)   a set of global control rules relating to an organizational structure and work affiliation among different departments and different hierarchical layers thereof;

(b)   a set of control rules relating to ad hoc work groups formed from time to time in said organizational structure; and

(c)   a global list of preferred originating addresses external to the organizational structure.

22.   A computer program comprising computer program code means for performing all the steps of any one of Claims 1 to 18 when said program is run on a computer.

23.   A computer program as claimed in Claim 22 embodied on a computer readable medium.

01490986\10-03   29

AMENDED SHEET